

**REMARKS**

Claims 1-3, 22-30 and 32-74 are pending in the present application. Claims 41-45 have been withdrawn from consideration pursuant to the Examiner's Restriction Requirement.

Claims 1-2, 22, 28-29, 46 and 66-68 are rejected under 35 U.S.C. §102(b) as anticipated by or, in the alternative, under 35 U.S.C. §103(a) as being obvious over Wahle et al. (USP 4,301,816). Claims 3, 23-27, 30, 32-40, 47-65 and 69-74 are rejected under 35 U.S.C. §103(a) as being obvious over Wahle et al. in view of Dale et al. (USP 4,317,460). Applicants respectfully request favorable consideration in light of the following remarks.

**Rejections of Claims 1-2, 22, 28-29, 46 and 66-68**

Claims 1-2, 22, 28-29, 46 and 66-68 are rejected under 35 U.S.C. §102(b) as anticipated by or, in the alternative, under 35 U.S.C. §103(a) as being obvious over Wahle et al. (USP 4,301,816). Applicants respectfully submit that these rejections are improper. As set forth in more detail below, Wahle et al. does not disclose a cigarette having a carbon monoxide pump as called for in the pending claims. More specifically, Wahle et al. does not disclose, teach or suggest either (1) an adsorbent for adsorbing carbon monoxide or (2) a venting hole associated with the carbon monoxide adsorbent for discharging desorbed carbon monoxide from the cigarette.

Wahle et al. discloses a cigarette having a multiplex (i.e., multiple component) filter mouthpiece. The multiplex filter mouthpiece disclosed in Wahle et al. includes a non-wrapped acetate filter ("NWA-filter") plug 31B. NWA-filter plug 31B consists of acetate fibers and has "a reinforced peripheral layer which is porous (i.e., is permeable to air.)" Col. 3, lns. 22-25. Wahle et al. further discloses that the multiplex filter mouthpiece is attached to the tobacco rod portion of the cigarette by a tubular envelop 43B. In addition, Wahle et al. discloses that the portion of tubular envelop 43B that surrounds the NWA-filter plug section of the multiplex filter

may be “formed with perforations or holes 53 which admit atmospheric air into the interior of the plug 31B whereby such air mixes with the column of tobacco smoke which flows toward the smoker’s mouth when the exposed end portion of the plain cigarette 41 is lighted.” Col. 3, lns. 33-39.

Wahle et al. discloses that the multiplex filter mouthpiece also includes one or more other “conventional filter plug” elements 39B, which “consist of acetate fibers and it may further contain certain adsorbent substances for tar, nicotine and/or other deleterious or presumably deleterious ingredients of tobacco smoke.” Col. 3, lns. 40-48. Wahle et al. specifies that the “absorbent substance may be carbon in pulverulent or granular form.” Col. 3, lns. 48-49; see also Col. 6, lns. 9-14 (“The material of the sections 39A is the same as that of the filter plug 39B shown in FIG. 1; each such section may comprise a filler consisting of acetate fibers and particles of absorbent material (e.g., charcoal) and a tubular wrapper 39D of paper of the like.”) There are no perforations or holes associated with filter plug element 39B.

The Examiner asserted that the claimed “adsorbent material” limitation in the rejected claims is met by the filter element 39B disclosed in Wahle et al. The Examiner stated that filter element 39B comprises cellulose acetate fibers, which may include absorbent substances such as charcoal to remove deleterious substances of the tobacco smoke. Applicants respectfully submit that Wahle et al. does not disclose, teach or suggest a cigarette having “an adsorbent material for adsorbing at least a portion of the carbon monoxide in the main stream smoke combustion products” as recited in the pending claims. The phrase “for adsorbing at least a portion of the carbon monoxide . . .” specifies a physical property of the claimed adsorbent material. Namely, the claimed adsorbent material adsorbs carbon monoxide as distinguished from other adsorbent materials which do not adsorb carbon monoxide. Wahle et al. does not

include any express or inherent disclosure of an adsorbent material for adsorbing carbon monoxide. In fact, Wahle et al. does not even mention carbon monoxide, let alone an adsorbent material for carbon monoxide. To the contrary, Wahle et al. merely discloses that filter element 39B is a “conventional” acetate fiber filter plug, which may include an absorbent substance for absorbing nicotine, tar and/or other deleterious substances in the main stream smoke. The only absorbent substances disclosed in Wahle et al. are carbon in pulverulent or granular form and charcoal.

The Examiner also asserted that the claimed “venting hole” limitation in the rejected claims is met by the perforations 53 disclosed in Wahle et al. The Examiner stated that perforations 53 satisfy the structural limitation of the venting holes and the “functional language” specifying that at least a portion of the carbon monoxide adsorbed on the adsorbent material is discharged through the venting hole is either inherent or would be obvious to a person of ordinary skill in the art. The Examiner further stated that the patentability of the pending claims cannot depend on these functional limitations, but instead must depend on the structural limitations to distinguish over the prior art. Applicants respectfully submit that the venting hole limitation in the pending claims is structurally distinguished over Wahle et al. and that the “functional” language is a proper limitation which further patentably distinguishes the claimed invention over Wahle et al.

First, the pending claims specify that there is at least one venting hole proximate the adsorbent material. As noted above, Wahle et al. does not disclose any adsorbent material having the physical properties of adsorbing carbon monoxide. However, even assuming that the charcoal adsorbent material in filter element 39B satisfies the adsorbent material limitation and that the perforations 53 satisfy the venting hole structural limitation in the pending claims, these

perforations are not in the vicinity of any adsorbent material. The perforations in Wahle et al. are exclusively associated with the NWA-filter element 31B, not the conventional filter element 39B. As repeatedly stated in Wahle et al., the perforated portion of the tubular envelop 43B is disposed around the NWA-filter element 31B “to admit atmospheric air into its interior by way of the reinforced permeable (porous) peripheral layer” of the NWA-filter. Col. 3, lns. 59-64; see also Col. 1, lns. 35-43 (“The perforations admit atmospheric air which is admixed to the column of tobacco smoke to reduce the percentage of nicotine and tar.”); Col. 3, ln. 65 – Col. 4, ln. 3 (“The envelope 43B’ has perforations 53’ which admit air into the interior of the ‘NWA-filter’ 31-B’.”); Col. 8, lns. 37-42.

The fact that the perforations 53/53’ in Wahle et al. are not associated with or work in conjunction with the filter section 39B/39B’ having the carbon/charcoal adsorbent substance is further highlighted by the disclosure in Wahle et al. that perforations 53/53’ may be either upstream or downstream the filter section 39B/39B’. The embodiment shown in Figure 1 includes the NWA-filter 31B with the perforations 53 downstream the filter section 39B, which may include carbon/charcoal adsorbent substance. In contrast, the embodiment shown in Figure 2 includes the NWA-filter 31B’ with the perforations 53’ upstream the filter section 39B’. With regard to each embodiment, Wahle et al. discloses that perforations 53/53’ are associated with the NWA-filter 31B/31B’ to admit atmospheric air into the interior of the NWA-filter. Col. 3, lns. 33-39; Col. 4, lns. 1-3.

Second, contrary to the Examiner’s assertion, it is well-established that functional limitations may indeed patentably distinguish a claimed invention over the prior art. In re Swinehart, 439 F.2d 210, 212 (CCPA 1971)(“[T]here is nothing intrinsically wrong with [defining something by what it does rather than what it is] in drafting patent claims.”) However,

like structural limitations, functional limitations do not carry patentable weight if those limitations were inherent in the prior art. In re Schreiber, 128 F.3d 1473, 1477-78 (Fed. Cir. 1997). As recited in the pending claims, the venting holes function as discharge ports for at least a portion of the carbon monoxide adsorbed by the adsorbent material in the carbon monoxide pump. Applicants respectfully submit that it is not inherent or obvious to one of ordinary skill in the art that any of the tobacco smoke combustion products, let alone carbon monoxide, will be discharged through the perforations 53 in Wahle et al. when the smoker is not inhaling on the cigarette. When the smoker is not inhaling on the cigarette, there is no flow of mainstream smoke through the cigarette. The smoke generated by the burning firecone remains at the ignited end of the cigarette and flows directly to the surrounding atmosphere. In fact, to the extent any air may pass through the perforated holes when the smoker is not inhaling on the cigarette, the air will be drawn into the cigarette through the perforations and pass toward the ignited end of the cigarette to feed the burning firecone.

Furthermore, even assuming that some of the mainstream smoke combustion products in Wahle et al. is discharged through perforations 53 to the surrounding atmosphere, there is no reason to believe that any of the combustion products adsorbed by the carbon/charcoal in filter 39B would be among those combustion products. To the contrary, one of ordinary skill in the art would understand that any combustion products adsorbed by the adsorbent material remain adsorbed on the adsorbent material. Desorbing the adsorbed combustion products back into the main stream smoke would render the use of adsorbent materials in filter 39B unnecessary and superfluous, as virtually all, if not all, of the desorbed combustion products will be reintroduced into the main stream smoke and inhaled by the smoker.

In sum, Wahle et al. is not even remotely disclose a cigarette having a carbon monoxide pump for removing carbon monoxide from the mainstream smoke. Wahle et al. does not disclose either an absorbent material for adsorbing carbon monoxide or at least one venting hole for discharging carbon monoxide from the cigarette. Further, even assuming that the charcoal adsorbent and perforations in Wahle et al. satisfied the “adsorbent material” and “venting hole” limitations of the present claims, Wahle et al. does not include any disclosure, teaching or suggestion that these features would work in conjunction with each other as a carbon monoxide pump to remove carbon monoxide from the mainstream smoke.

**Rejections of Claims 1-2, 22, 28-29, 46 and 66-68**

Claims 3, 23-27, 30, 32-40, 47-65 and 69-74 are rejected under 35 U.S.C. §103(a) as being obvious over Wahle et al. in view of Dale et al. (USP 4,317,460). Applicants respectfully traverse these rejections on the following grounds. Applicants submit that there is no motivation, inference or suggestion for the combination of these references as proposed by the Examiner. In addition, the smoking article that would result from the Examiner’s proposed combination would not meet the limitations of the rejected claims.

“To establish a prima facie case of obviousness, . . . there must be some suggestion or motivation, either in the prior art references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the references or to combine reference teachings.” MPEP §2142, citing In re Vaeck, 947 F.2d 488 (Fed. Cir. 1991). Wahle et al. and Dale et al. are entirely devoid of any motivation or suggestion for the Examiner’s proposed combination.

As set forth above, Wahle et al. is directed to a multiplex cigarette filter having (1) one or more conventional sections formed of acetate fibers, which may also include

carbon/charcoal adsorbent substance and (2) a NWA-filter section also formed of acetate fibers and having a reinforced peripheral layer which is porous. The multiplex filter is surrounded by a tubular envelope, which includes perforations only in the portion surrounding the NWA-filter for admitting atmospheric air into the interior of the NWA-filter. Wahle et al. makes no mention of an adsorbent for adsorbing carbon monoxide from the mainstream smoke, let alone further catalyzing the carbon monoxide to carbon dioxide before the mainstream smoke is inhaled by the smoker. Accordingly, there is no motivation, suggestion or inference in Wahle et al. to include the catalyst of Dale et al. as suggested by the Examiner.

Dale et al. discloses a smoking article having an improved catalyst-based system for low temperature oxidation of carbon monoxide to carbon dioxide. More specifically, Dale et al. is directed to a system having a catalyst with increased activity for eliminating all or nearly all of the carbon monoxide from the mainstream smoke by converting it to carbon dioxide before the mainstream smoke is inhaled by the smoker. Accordingly, there is no motivation, suggestion or inference in Dale et al. for use of its catalyst in the cigarette of Wahle et al., which the Examiner asserts teaches the use of perforations for discharging mainstream smoke combustion products from the cigarette. In fact, Dale et al. teaches away from such a combination as it discloses converting all or nearly all of the carbon monoxide in the mainstream smoke to carbon dioxide.

As discussed above, Wahle et al. does not disclose a cigarette having a carbon monoxide pump as called for in the pending claims. In fact, Wahle et al. does not even mention carbon monoxide or the need to adsorb and divert it from the mainstream smoke inhaled by the smoker. Accordingly, for the same reasons set forth above with regard to the Examiner's rejections of claims 1-2, 22, 28-29, 46 and 66-68 as anticipated by or obvious over Wahle et al.,



the Examiner's proposed combination of Wahle et al. and Dale et al. does not meet the "adsorbent material" or "venting hole" limitations of claims 3, 23-27, 30, 32-40, 47-65 and 69-74.

### CONCLUSION

Based on the foregoing remarks, Applicants respectfully submit that the pending claims are in condition for allowance.

### AUTHORIZATION

The Commissioner is hereby authorized to charge any additional fees which may be required for consideration of this Amendment to Deposit Account No. 13-4500, , Order No. 4505-4016. A DUPLICATE OF THIS DOCUMENT IS ATTACHED.

In the event that an extension of time is required, or which may be required in addition to that requested in a petition for an extension of time, the Commissioner is requested to grant a petition for that extension of time which is required to make this response timely and is hereby authorized to charge any fee for such an extension of time or credit any overpayment for an extension of time to Deposit Account No. 13-4500, Order No. 4505-4016. A DUPLICATE OF THIS DOCUMENT IS ATTACHED.

Respectfully submitted,  
MORGAN & FINNEGAN, L.L.P.

Dated: May 18, 2004

By:



Robert K. Goethals  
Registration No. 36,813

Correspondence Address:  
MORGAN & FINNEGAN, L.L.P.  
345 Park Avenue  
New York, NY 10154-0053  
(212) 415-8729 Telephone (Direct)  
(212) 751-6849 Facsimile